

A NEW ACTINIAN, *PARANTHUS SOCIATUS* N. SP.¹

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SIX FIGURES

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This actinian is abundantly found from spring to summer on the sandy flat between the tidal lines in the neighbourhood of the Amakusa Marine Biological Station. It usually occurs attached to gastropod shells of various kinds but mostly to *Cerithium* sp. The number of the actinians on one shell is generally one, but two or three individuals are often found on a shell. As regards size and coloration this species more or less resembles *Diadumene Luciae*, one of the common actinians widely distributed in Japan, but can easily be distinguished externally from the latter in the lack of acontia and in details of coloration.

Body generally 7—10 mm high and 6—8 mm wide, pedal disc adherent and expanded to cover the shell, the height being variable according to substrate. Column smooth, without verrucae, variable in form; on the flat substratum cylindrical, though slightly widened near the base, but on the shell nearly cone-shaped with a well-expanded pedal disc. Oral disc surrounded by several series of tentacles which

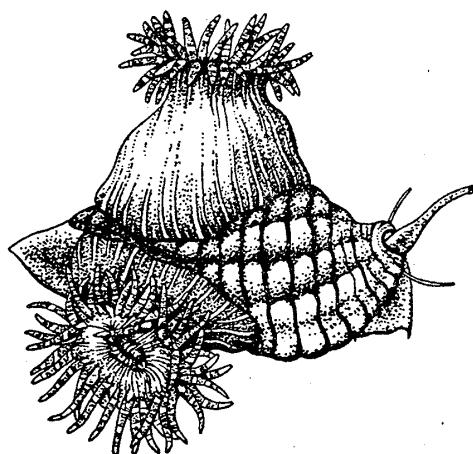


Fig. 1. *Paranthus sociatus* n. sp. ×5/2

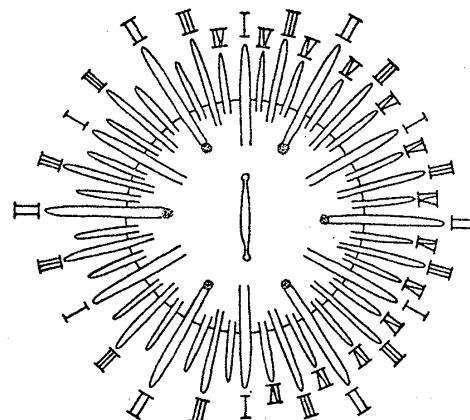


Fig. 2. *Paranthus sociatus* n. sp.,
arrangement of tentacles.

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are moderate in length but not very extended. The mouth situated in the central part is slit-like. The oral angles are often marked with white spots. The tentacles which number 48 are arranged hexamerously in four circlets as follows: 6, 6, 12, 24. The first two circlets are longer than the other two. The tentacles of the first series are directed nearly upright or inwards. At the inner base of the tentacles of the second series occur the most conspicuous white spots which are different in relative size according to individuals. These tentacles are nearly colorless but streaked with a few white bands.

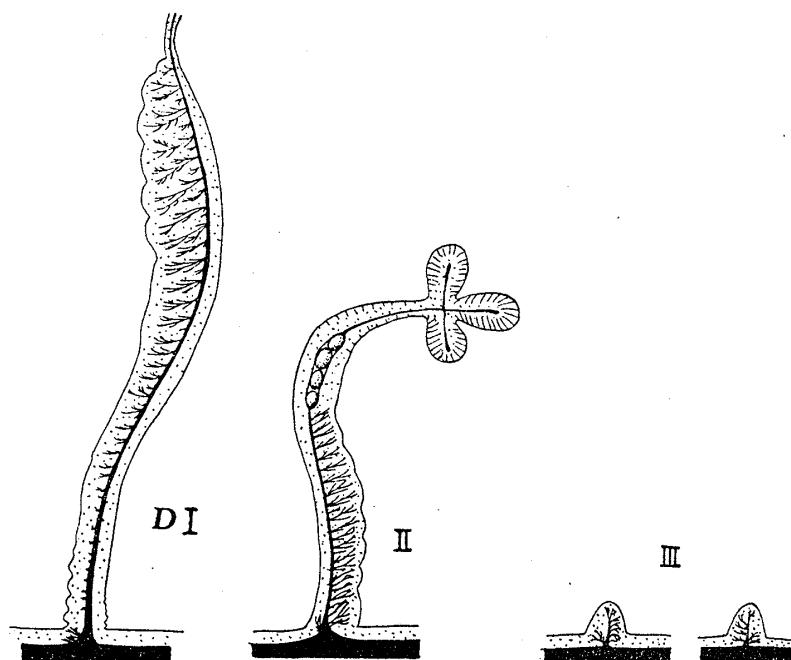
The coloration of the actinian is nearly constant. Oral disc greenish brown, radially streaked with narrow white lines, each of which corresponds respectively to a marginal tentacle. Mouth with two white spots, each mounted on the directives. Column greenish brown or brownish green, but sometimes plain brown or plain olive. In general, the upper part more greenish, and the lower more brownish. There are 24 yellowish brown longitudinal lines on the column, each corresponding respectively to a tentacle of the first three circlets. Those corresponding to the tentacles of the first and the second series are

broader than those corresponding to the third series. On both sides of the longitudinal lines of the third order there are present short streaks arising from the basal position but extending not very far upwards. These incomplete streaks correspond to the fourth series.



Fig. 3. *Paranthus sociatus* n. sp.,
part of the base, showing
arrangement of streaks.

Tentacles with smooth surface; their ectoderm is rather thick, composed of several layers of cells containing many nematocysts. The mesogloea is thin and fibrous, giving rise to many short ectodermal muscles which are feebly developed. The endoderm is composed of a single layer of cells, about half in thickness of the ectoderm, generally granulated. In the column the ectoderm cells are high-cylindrical, containing many glandular cells. The glandular cells have their enlarged heads near the surface and their narrowed tails in the inner portion. The mesogloea, robust and fibrous, is thinner than the ectoderm but thicker than the endoderm. The endoderm, thickly packed with granula, is thick in the stomach. The stomodaeum is lined with ectoderm cells making many foldings. The siphonoglyphs are two, distinct, not much differentiated from the other parts of the stomodaeum, but seemingly

Fig. 4. *Paranthus sociatus* n. sp., section of mesenteries.

provided with more glandular cells and marked cilia. Lower in the stomach the endoderm cells are all high and elongate, containing granula. The mesenterial filaments have a glandular tract with many narrow glandular cells and an alveolar tract containing many granula. The mesogloal sphincter well developed, continuous, extending over a long tract near the oral margin. The muscle pennons of the mesenteries are diffused, rather feebly developed. In all the mesenteries, the pennons of the directives are best developed, the development of the pennons accords with the series of the mesenteries. The parietobasilar muscles are developed near the base of the column.

In the arrangement of the mesenteries, inequality is clearly observed. The six pairs of mesenteries of the first series, in which are included two pairs of directives, are perfect in horizontal sections near the oral disc, but in horizontal sections through the lower parts, the directive pairs alone are perfect, while in the other four pairs the ventral mesenteries are perfect but the dorsal ones are always imperfect. The inequality is also seen in the mesenteries of the second series; in section near the oral disc, out of the six pairs of mesenteries, the two dorsal pairs are perfect, but in the two median and two ventral pairs only the ventral components are perfect while the dorsal ones are

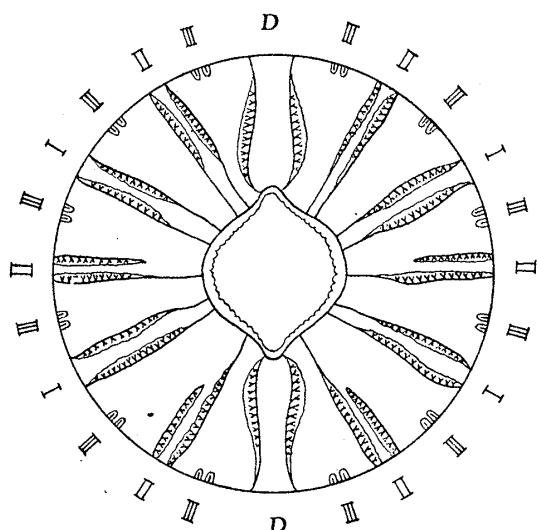


Fig. 5. *Paranthus sociatus* n. sp.,
diagram of horizontal section through the
upper part of the actinopharynx.

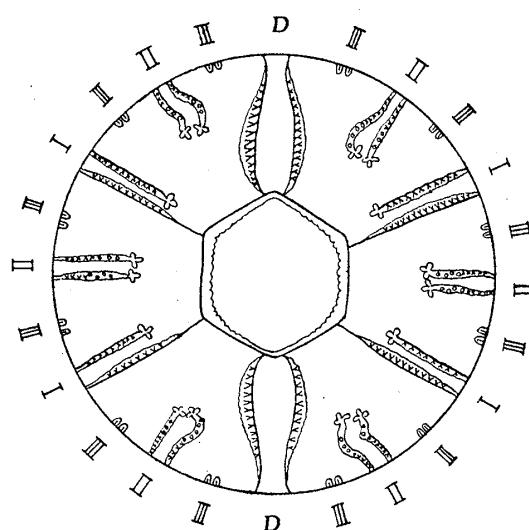


Fig. 6. *Paranthus sociatus* n. sp.,
diagram of horizontal section through
the lower part of the actinopharynx.

imperfect. The mesenteries of the first three orders have mesenterial filaments in the stomach and are all fertile, but those of the fourth order are always imperfect and sterile, lacking mesenterial filaments. Sexes separate.

Remarks. The new species bears some resemblances to the description of *Paractis lineolata* by Mc Murrich (1893). But the arrangement of the mesenteries is definitely different in these two species.

In conclusion the writer wishes to express his cordial thanks to Prof. H. Ohshima, Director of the Amakusa Marine Biological Station and Mr. K. Baba of the Station for many kindness shown to the writer during his sojourn at the Station.